

**EarthTrax, Inc. White Paper Series**

# **Auction Optimization**

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**510 SAN FELICIA  
LOS ALTOS, CA 94022  
1.888.999.USA9**

**[INFO@AUCTIONPROFITS.COM](mailto:INFO@AUCTIONPROFITS.COM)  
[WWW.AUCTIONPROFITS.COM](http://WWW.AUCTIONPROFITS.COM)**

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## Got an item? Auction it!

How many times have you gone to the garage and picked up an unused bicycle rack, or while cleaning out your closet, picked up an old baby carriage or some other unused item that may still have some value to someone else? How many times have you dusted off older chinaware or a relatively new toy that someone else's child may find useful? How many times have you picked up these items and thought about having a "garage sale", or better yet, selling them on eBay?

These are just two solutions that millions of Americans may encounter while rummaging around the house cleaning up. Typically, the first thought may just be to gather those items and call the local charity. But, in today's economy, wouldn't it be better to try to sell them on the largest auction house, as long as it would consume very little of your time?

If you're already familiar with eBay, selling multiple items on auction, and making a set monthly income on a constant flow of inventory, wouldn't it interest you to be informed about the latest buying trends? Wouldn't you be interested in, perhaps, the latest fads that people are over-paying for, or broadening your inventory by discovering items that have a greater profit margin?



## Price to Sell

Now that you have the items in hand, what do you do with them? Assuming that you wish to get back the initial investment, the most favourable place to take it is an on-line auction house that would most likely bring the most return on market value. And this auction house would of course be eBay.



How does a knowledgeable seller figure out the correct selling price for an item? He starts by searching for similar completed auctions, to see their ultimate selling prices. This is more difficult than it sounds – he will have to eliminate some auctions that may match the search keywords, but aren't really the same. He will have to take into account different auction conditions, such as starting day and duration. He will have to take into account which auctions completely failed, and why. Once he gets it narrowed down to a reasonable set of comparable auctions, he will still notice some mysterious variation in auction results, and will have to make an educated guess about what to do from there.



Let us take an example of a new pair of Diesel Rotuck jeans (a popular and trendy piece of clothing that “kids” currently wear.) If you were to search on “Diesel Rotuck”, you would find that there are very many auctions for these jeans, listing at times in the hundreds. Now, most people might then research it further and look at the completed list for this search criterion and find almost a thousand completed auctions for this type of pair of jeans. Quickly scanning that list, you might conclude that the final price that you would obtain would be approximately \$95, on average. But, could you possibly do better? If you’re currently an eBay Power Seller, you know that your cost for the jeans is about \$45.00, and realize that your return most likely would be \$95. Scanning the list of completed auctions, you see many have gone for as much as \$135. How do you get that much, or possibly even more, for the same type of jeans?

There are two of the easiest starting prices at which to commence this auction: \$0.01 or \$95.00. We shall describe the serious problems associated with each.

Assume that you start your auction for this new pair of typical Diesel Rotuck jeans at \$95.00, and let the auction run for a given 7 day period. Typical bidder psychology will then dictate that although many people might look at your auction, no one will bid on it until possibly the very last minute of the duration. Depending on many other factors, you may not even attract any bids, thus leaving you with a failed auction. You would then have lost at least \$2.10 for listing the auction with eBay, neglecting other such fee associated with hosting the photos. However, should you be successful in finally selling these jeans, you will discover that you may have attracted only one or two bids, and again, dictated by typical bidder psychology, these bids would have been placed at the very last minute of the auction. All this means is that the starting price was too high.



On the other hand, assume you start the auction for these jeans at \$0.01, and let it run for the typical 7-day period. There would then be many more bidders looking at your auction, but only a few people might typically bid on it and get the price up to about \$25, and then stop for a few days. On the sixth day of this auction you would then see that there were a few bids in the beginning to bring the price up to \$20.00, and other bids, leaving you to think that all you will be getting for these jeans is \$20.00. This would inevitably be depressing, since you would be to realize that your cost was \$45.00. And, at this stage of the auction, eBay has been known to have computer failures, or the like, disallowing people to bid on all auctions. You would then end up with only \$20.00 for the jeans – a loss of \$25.00, plus auction fees.

There is one solution that eBay offers to avoid the above problem: setting a “**reserve**” price. This is effectively the minimum price that the item will be sold for. So, if you take the above example with the starting price of \$0.01, and place a reserve price on it for \$95.00, typical bidder psychology would dictate that you would receive very many

people visiting your auction, but no one bidding on it, usually because of the “**reserve not met**” tag associated with this auction. The end result is usually another failed auction, leaving you with the inventory item still on hand and having to pay eBay their auction fees.



Let us describe to you a different example: It is mid-October and you have managed to obtain a small inventory of popular talking Elmo dolls that you know will be in high demand. You have done your research and know that you can most likely get about \$45.00 for each doll on auction. You then put up your auctions one per week and receive at least \$45.00, but start noticing that as Christmas draws closer, the expected final price increases based on popularity and demand. You start receiving bids as high as \$64.00 for each doll, only due to the overwhelming Christmas demand. Shouldn't you have waited to auction off all your inventory then?

## Optimization

The ultimate goal is to obtain the maximum return possible on your auctioned items. To accomplish this, one must first consider several important factors: a good start price, a workable auction duration, and general timing. By the examples given above, we could research for hours the current auctions to determine the optimal values here, or simply by trial and error, determine the best values such that our return would be the greatest. Either way, we will have wasted too many resources and too much time to derive at the optimal auction parameters for the highest return.



As an example, we shall consider the item “Sonicare Vibrating Toothbrush” assuming that we were able to stock up on 50 of these directly from the manufacturer at well below cost. Once again, the most intelligent thing to do is to research “current market value” on eBay. We would begin by searching for all current auction items that effectively meet the same criteria of our inventory at hand and come up with a list of current auctions, each of which have essentially a different start price, and most of which have durations lasting 7 days. We would also look at the completed list to see what has sold and when it sold, but then determine that this list is almost futile, since eBay currently holds a completed auction list spanning only 2 weeks; and eBay keeps shortening that list over time. (We believe that eBay may reduce their completed auction list to around only 3 days in the near future.) After several hours of this “research”, we would end up having to guess the best start price, best auction duration, and best time to start the auction. The result of this auction would most probably be a return of only an average amount, or most likely, less than average for our toothbrush set. We could continue this trial and error approach for several weeks until the return is as much as 20% higher than the average for each toothbrush set of equal nature. But during those numerous, frustrating weeks, we will have lost valuable income.

## Ease of Use

Aside from optimizing our auction parameters, the other ultimate goal is to be lazy about it. We wish to expend as little resources as possible, mentally and physically, having to set up the auction. We wish to concentrate only on the primary goal: sell our inventory for as much as possible – even as much as 25% or higher than everyone else. We wish to have some sort of automated mechanism that would be intelligent and calculate these things for us, so that we may focus on selling.



## *AUCTIONPROFITS* Comes To The Rescue

The team of mathematicians and software developers at the *AUCTIONPROFITS* labs has worked hard to invent the best way to find the optimal auction parameters for your auction. Our **patent-pending** technology will take into account the specifics about your inventory item and optimize the auction settings for you.

It systematically analyzes individual auctions and their bid histories by examining specific patterns of behavior, constraints placed on bidder activity by the rules of the eBay auction system, and typical bidder psychology. The software performs this analysis on a set of auctions relevant to the search terms requested by the user. It then uses this information to derive a mathematical model that predicts the optimal parameters to initiate the auction, including start price, start day and date, reserve price, "buy it now" price, and auction duration.

Using this technology, we have built a web-based application that a seller can use with just one or two mouse clicks to make their auction the best it can be. For each auction, the application provides:

- Best start price
- Best time window (time of day, day of week, or even month of the year)
- Best duration of auction
- Buy-It-Now price
- Reserve price target
- Auction splitting suggestions

By using these values to place your auction, the end result may usually be 25% or more revenue. This means that you will no longer need to worry if you're going to get "the most" for your auction.

In addition, the application has these other convenient features:

- A personalized database containing seller's historical auction information, and product photos
- A common chat room for communication with other sellers

## Reasons To Use *AUCTIONPROFITS*

- 1.) Make More Money – Increase revenue by 25% or more on all auctions.
- 2.) Stay Current – Access a dynamic database of current bidders' habits, by category.
- 3.) Start Right Away – Generate and apply optimal parameters in two mouse clicks.
- 4.) Keep a Catalog – Warehouse all submitted auctions for historical reference.
- 5.) Stay Informed – Chat with other subscribers to find latest trends or refine strategies.
- 6.) Expand Marketplace – Market products directly to other subscribers' bidders.
- 7.) Feel Secure – Keep all transactional records private, and in a secure location.
- 8.) Beat the Competition – Feel confident in using our unique **patent-pending** technology.

## Examples of the Revenue Increase

The following graphs will demonstrate added benefits of using *AUCTIONPROFITS*:

